



Aculon™ RD-A,

Nano-Scale Adhesion-Promoting Surface Treatment

Product Information

Introduction

Aculon RD-A nano-scale organometallic coating product is a surface treatment capable of promoting adhesion on most metal surfaces. It can be applied *via* most traditional coating processes, including dipping, spraying, wiping, *etc.* It is designed to improve adhesion for coatings that react with metal alkoxide functional groups (*e.g.* silane/siloxanes, phosphonate/phosphates (acid forms), carboxylic acids, *etc.*).

Composition

Solids	Solvent	Color
<1% Proprietary Ingredients	Isopropanol	Clear/ Colorless

Physical Properties of Formulation (all values @ 25°C)

Viscosity*	2 cP
Boiling Point of Solvent	82°C
Flash Point	12°C
Environmental	Non toxic, non-ozone depleting, flammable
Shelf Life	2 Years (Unopened container)

*Determined by Zahn Cup #1 testing

Physical Properties of Post Treatment Coating

Visible Light Transmission	100%
Coating Thickness	Variable, depends on application technique (typically 5-100 nm)
Solvent and Chemical Resistance	High

Features

- Improved adhesion strength of silicone paints/coatings on metal surfaces
- Excellent chemical bonding to many metal surfaces
- Does not out-gas
- No stress build-up on the substrates
- Does not change the appearance of the surface
- Treated surfaces are very stable (if stored in typical office/lab conditions)
- Easy to apply through standard wet coating methods such as dipping or spraying

Application Ideas

- Use as a primer layer for organosiloxanes/organophosphonates
- Improved bonding of silane (high temperature) over-mold compound

Application Protocol

Surface Preparation/ Cleaning:

Ensure that the surface is free of any grease, fingerprints or dirt (*i.e.*, water break free). This can be accomplished by first degreasing the surface with solvents or by rinsing with soap and water.

The next step is to remove monolayer-scale contaminants. This is typically performed by using a cleaner specifically designed for the metal you are working with. Contact Aculon if you are unsure what cleaner to use and we will recommend one best suited for your application. The substrate should be water break-free before continuing to coating steps.

Treatment Application:

Spray: Spray the solution onto the substrate using double passes. **Spray Equipment Suggestions:** HVLP (Binks Mach 1), HVLP (Devilbiss JGHV), Air Atomization (Devilbiss MBC gun), and Airless (Graco Model 225-292 President Pump Series A).

Dip: – Immerse the substrate in the solution for 10 seconds then remove and dry.

Dip Coating with Sonication: Ensure the substrate is clean. Completely submerge the substrate in the solution and sonicate for 10 seconds. Air dry.

Drying/ Curing: Typically Aculon RD-A does not require a cure on most substrates however it does benefit from a brief (5 minute) cure at 60 °C, when appropriate.

Equipment Cleaning: Clean all equipment with alcohol (*e.g.* isopropanol).

Safety, Handling, Storage, Shelf Life:

Store in a cool (~25°C) and dry area, and keep away from direct sunlight. See this product's MSDS for proper handling and fire hazard data. When stored properly, product has a 2 year shelf life from the date it is opened.

For Additional Information:

To request additional product information or sales assistance, contact Aculon's Technical Team, at 858-350-9474. For information on other Aculon products, please visit our website at www.aculon.com.

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